

If $\{f_n\}$ is a sequence of functions in $\mathcal{C}(X, Y)$ and f is a function in $\mathcal{C}(X, Y)$, then $f_n \rightarrow f$ uniformly on X if and only if $\sup_{x \in X} \|f_n(x) - f(x)\| \rightarrow 0$ as $n \rightarrow \infty$.

EA